

### REMARKS

The Examiner is thanked for the review given the application and withdrawal of the Office Action mailed July 8, 1999.

Per the Examiner's suggestion, the proposed amendment to Figure 3 has been resubmitted as a new Figure 8. The proposed figure has also been slightly amended to be consistent with the amended claims as discussed below.

In the Office Action Claims 1 – 19 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. The Applicant respectfully traverses this rejection for the reasons more fully set out below. However, in order to expedite prosecution and issuance, the Applicants have made the foregoing amendments to more clearly point out and distinctly claim the invention. Specifically the Applicant has amended Claims 1 and 10 so that “tilting the trajectory” now reads “determining the tilted trajectory”. In addition, the claims have been amended to more clearly refer to each of the desired satellites rather than “at least one” of the desired satellites.

The Examiner asserts that claims 1 and 10 present a contradiction in that “tilting the trajectory” precedes “generating the command signals for modifying the trajectory”. In the application, “tilting the trajectory” is generally applied to mean determining or modeling a tilted trajectory. Only when a tilted trajectory is actually implemented, i.e. “modifying the trajectory”, is an actual satellite trajectory affected. Implementation of the trajectories for the constellation is only discussed as a final operation beginning on page 8, line 24 to page 9, line 22. However, as previously mentioned, the claims as presently amended now clearly recite the step of determining the tilted trajectories.

In the Office Action Claims 1 – 19 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Draim in view of Westerlund or Fowell. The Examiner asserts that Draim discloses a satellite constellation covering a specific geographical area but is silent on tilting the trajectory to reorient the constellation to cover a second coverage. The Examiner further asserts that Westerlund or Fowell

teach that tilting satellites to “reorient” the satellite constellation to cover various geographical areas are well known in the art and that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have tilted the trajectory of the satellite constellation of Draim as taught by Westerlund or Fowell to maximize the coverage area of the desired geographical area.

However, Draim teaches a satellite constellation for continuous global coverage. Westerlund and Fowell teach tilting satellites, i.e. tilting the inclination angle of the actual satellite. Westerlund teaches orienting the spin axis of satellite. See column 3, lines 47 – 68. Fowell teaches correcting pointing errors which may be induced by an inclined orbit. See column 2, lines 47 – 54. The claimed invention is not tilting a physical object, however, but rather is tilting the trajectory of the satellites to reorient the satellite constellation as a function of the time dependent coverage of the satellite constellation prior to tilting. Tilting the trajectory of the satellites does not necessarily affect the inclination angle of the satellites. The method and system as presently claimed provide a general systematic approach to synchronize with local time coverage of an entire satellite constellation consisting of more than one satellite. See page 1, lines 22 – 25 of the specification.

Furthermore, it appears that the Examiner has misapprehended the meaning of the limitation, “relative configuration”, added by prior amendments. The relative configuration within the satellite configuration refers to the aspect that the satellites within the constellation maintain the same orbits relative to each other before and after modifying their trajectories relative to the earth. See page 8, lines 6 – 8 of the specification. Thus, the overall performance of the satellite constellation can be improved without any alteration to the space segment hardware.

In view of the foregoing, even combining the cited references would not yield or make obvious the invention as presently claimed. None of the references, taken alone or in combination, teach or suggest the method or system of the present invention as presently claimed in Claims 1 and 10. As Claims 2 – 9 and 11 – 19 depend from Claims 1 and 10, the foregoing arguments apply as well.

Based on the foregoing, reconsideration of the rejections of Claims 1 – 19 and allowance thereof is respectfully requested.

Respectfully submitted,  
Kar W. Yung et al.


By: 

Bradley K. Lortz, Reg. P-45,472  
Attorney for Applicant  
(filed under 37 CFR 1.34(a))

Hughes Electronics Corporation  
Bldg. 001, M.S. A109  
200 N. Sepulveda Blvd.  
P.O. Box 956  
El Segundo, California 90245-0956  
(310) 662-9920

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, DC 20231 on **March 13, 2000.**

  
Bradley K. Lortz, Reg. P-45,472